THE
VETERINARY RECORD.

The Official Journal of the National Veterinary Medical Association of Great Britain and Ireland, Limited.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S., 1888.

No. 24. JUNE 13, 1925. VOL. 5.

Vaccination against Diphtheria and Fowlpox with Antidiphtherin.

(METHOD OF PROFESSOR DE BLIECK AND DR. V. HEELSBERGEN).

By DR. T. VAN HEELSBERGEN, Bacteriologist at the Veterinary University, Utrecht (Holland).

The vaccination against fowl diphtheria and fowlpox is based on the ætiological similarity of both diseases, and on the fact that the great majority of the cases of diphtheria are caused by the so-called pox-virus.

It was brought to light by the researches of Carnwath[1], Uhlenhuth[2], Manteufel[3], v. Ratz[4], v. Betegh[5], v. Heelsbergen[6] and others, that both diseases are caused by one and the same virus. This does not do away with the fact that in one case the virus shows a decided avidity for the mucous membrane, whereas in the other case it has a special predilection for the skin (comb and wattles). Mixed forms very often occur. The yellow spots on the mucous membranes of the mouth, throat and eye are, however, generally the most conspicuous, so that these symptoms have become the centre of interest, bringing this disease to the knowledge of everybody under the name of diphtheria.

If, however, one takes the pox material from the comb and brings this directly, or *via* the bloodstream, in contact with the mucous membrane, then the yellow diphtherial spots put in an appearance.

The yellow spots on the mucous membrane and the eruptions on comb and skin are caused by one and the same infectious agent.

When a hen has suffered from the mucous membrane form of the disease, then she has become immune against the skin-form (fowlpox) and *vice versa*.

The Vaccination.—The fowlpox virus, either in altered or in unaltered form, is chiefly used as vaccination material against diphtheria and fowlpox.

1st.—In unaltered form (Basset-Beach[7] virus inoculation) it will always remain a danger in regard to the increase in the number of cases of diphtheria.

2nd.—In altered form, the virus can be divided into :

(*a*) Killed virus (Beach)[8].

(*b*) Chemically or physically attenuated virus (Beach-Verge-Panisset)[9].

(*c*) Fully living virus, modified virus (vaccine de Blieck and v. Heelsbergen).

The vaccination with unaltered virus is undoubtedly accompanied by serious danger. Serious reactions and expansion of the disease may be the result. We often observed this.

The months October, November, December are the most dangerous in this respect in Holland and Belgium, and in other parts of North Europe. A vaccination with unaltered virus may be tolerated as emergency treatment in cases in which the disease already exists in the flock.

Vaccinations with killed virus have never had much success in case of the human variola (smallpox).

Beach contends that his vaccination with killed virus does not protect against the experimental infection. Our manifold experiments on this subject have proved that the vaccination with killed virus only protects to a small extent against spontaneous infection. This is also the experience of a great number of veterinary surgeons and breeders.

Beach[10] has tried to obtain better results by vaccinating twice with this killed virus. After that, in 1922, dried virus and living virus, which had been suspended in glycerine, have been used. It goes without saying that the immunizing results are much better. But we have experienced that such a vaccine can be dangerous. The attenuation brought about by drying is not constant.

In the optimum period of the diphtheria, there are factors at work in nature which can make a chemically or physically attenuated virus virulent again.

In 1923 Beach[11] tried to obtain better immunity by means of a double vaccination. First the fowls are vaccinated with the heated virus and after some weeks infected with living virus. The immunity thus obtained, is supposed to be altogether sufficient. This method, however, has a practical drawback, *viz.*, the animals have to be caught twice. Besides giving more work, this does not affect the hens favourably.

I have not been able to make out if the inoculation with this sort of virus does not eventually give rise to too serious reactions. We (Professor de Vlieck and Dr. van Heelsbergen[12-13]), have always tried to discover a fully living vaccination material, which is attenuated neither physically nor chemically, which always causes a local pox eruption, and never gives rise to generalisation, which is constant for all these properties, and which protects, for a long time, against the experimental as well as against the spontaneous infection.

After having experimented for over three years, we have succeeded in preparing such a virus. Because of its absolute innocuity this vaccine is especially suitable for preventive purposes, *i.e.*, when no cases

of disease occur in the flock. The inoculation should, however, also be applied to infected flocks in order to prevent the spreading of the disease. The name "*Antidiphtherin*" has been given to this vaccine in order to distinguish it from others.

General methods of application of different vaccines against diphtheria and fowlpox.

Subcutaneous.—This method of application has the advantage that it works quickly. It has, however, also some disadvantages. When dead vaccine (1st method Beach) is applied, the subcutaneous injection is the most advisable, since this killed virus is no longer fit for cutaneous application, as it does not give a reaction in this way.

The immunising power of killed virus, however, is small. But when using living or attenuated virus, we should bear in mind that, along with the real pox-virus, we inject a number of other living microbes.

It is difficult to state which of these are the most noxious, but in the case of the subcutaneous injection of living virus we often see the hens decrease in weight and a local necrosis set in.

The intradermal injection is used in the case of vaccination, as applied by *Verge* and *Panisset*. A smallpox virus weakened by carbolic acid is used as vaccine. It is evident that when using this intradermal method, only small quantities of vaccine are injected. This does not, however, prevent generalisation of the action when injecting according to this method.

The cutaneous application.—Recently the skin has proved to possess a very important immunising power. (*Besredka-Pondorff and others*) against various infections.

This especially holds good for those diseases which have their origin in the epithelium.

The variola (smallpox) can be looked upon as the prototype of these diseases. The classic Jenner's vaccination is also based on this property. It has, therefore, been our aim to make the vaccination against the diphtheria and pox of the hen analogous with the human smallpox vaccination. In our opinion it is advisable to call forth a pox-eruption on the skin of the hens, similar to the vaccination eruption of human beings, which only occurs locally and never gives rise to generalisation. We, therefore, at first applied the vaccination on the comb. This spot has the advantage of being easily accessible for the application. Experience has, however, proved that this spot has its disadvantages.

In order to obtain immunity, it is absolutely necessary that one or more inoculation pocks should appear. When the comb is hyperæmic and well developed the inoculation pocks generally manifest themselves very distinctly.

In the case of small or shrivelled combs (non-laying hens) the vitality of the epithelium is often so greatly diminished that an insufficient number of inoculation pocks occur.

We have therefore tried to obtain a skin vaccination which yields a reaction of 100 per cent. for sensitive hens. It seems to us that we have attained this end by means of an application of our vaccine in the skin-follicles. The fowlpox virus is by origin a follicular virus.

x Positive Re-action with Antidiphtherin, five days after vaccination. The other leg shows a negative reaction.

INOCULATION METHOD DE BLIECK-HEELSBERGEN.

This inoculation is based on two principles:—

1st.—A thoroughly living vaccination material, the vitality of which has not been decreased, either physically or chemically, which always gives rise to a local pox-eruption, which never generalises, which immunises against the experimental as well as against the spontaneous infection, and which is constant for all these properties during all seasons.

2nd.—A way of application which is analogous to the classic Jenner's inoculation, *viz.*, a skin vaccination.

—200,000 hens have been inoculated in Holland, Belgium, Germany and Switzerland, according to this method, during the winter of 1924-1925, without our receiving one single complaint about too serious a reaction or an insufficient immunity. The vaccination was applied preventively in infected as well as in non-infected flocks, whereas vaccination of infected hens often had a favourable influence.

We were never informed that the hens which had been vaccinated prophylactically were affected with this disease during the following winter period.

Taking into consideration that the disease chiefly occurs during the autumn and winter months, it is advisable to perform this prophylactic vaccination during August and September. The laying is generally not noticeably influenced by the vaccination, which is applied regularly every year in the greater part of the best known poultry farms in Holland.

Out of the very many favourable results of which I was informed, I mention the following only:—

In the Dutch Test Breeding Station for poultry breeding at Beekbergen, and in that at Horst, also in the laying-competition at Paturages (Belgium), as well as in the best known poultry-farm of Welleman Bros. at Buurmalsen, the inoculation has been applied prophylactically during two or three years.

Whereas these concerns had to deal with diphtheria every year before the vaccination, they have been absolutely free from the disease ever since.

The vaccination has become obligatory for various laying competitions before the hens are forwarded. I have reported on this subject on the 3rd National Congress for poultry and rabbit breeding, the Hague, 1925.

References.

1 *Arl. aus dem kaiserl. Gesundh.*, 1907.
2 *Arl. aus dem kaiserl. Gesundh.*, 1910.
3 *Arl. aus dem kaiserl Gesundh.*, 1911.
4 *Ablatervosi Lapok* (Budapest), 1911.
5 *Centr. f. Bakt. Orig., I. Abt., Bd.* 67.
6 *Tydschr. v. Vergel.*, Geneesk. Deel III., afl. 3.
7 Basset: *Recueil de Méd. Vét.*, 1924, No. 8.
8 Beach: *Rapport* 1e *Intern. Pluimveecongres*, der Haag, 1921.
9 Verge et Panisset. *Recueil de Méd. Vét.*, 1924.
10 *Report of the College of Agriculture, California*, 1922.
11 *Report of the College of Agriculture, California*, 1923.
12 *Tydshcrift voor Diergeneeskunde*, Dl. 49, afl. 6.
13 *Berl. Tierarztl. Wochenschrift*, 1923, No. 8.

The Royal Sanitary Institute Congress.

The thirty-sixth Congress of the Institute, the delegates and members to which are expected to number over 1,200 to 1,500, will be held at Edinburgh, from July 20th to 25th. Already 675 delegates have been appointed from nearly 400 sanitary authorities from all parts of the United Kingdom. Delegates will be attending from Australia, India, South Africa, China, Egypt, France, Japan, U.S.A., New Zealand, Canada, Poland, and British West Indies.

The meetings will be held in the University. The Congress is divided into Sections (Sanitary Science—Engineering and Architecture—Maternity and Child Welfare—Personal and Domestic Hygiene—Industrial Hygiene) and Conferences (Representatives of Sanitary Authorities—Medical Officers of Health—Engineers and Surveyors to Sanitary Authorities—Veterinary Inspectors—Sanitary Inspectors—Health Visitors—Health Workers). The names of those who will preside over these meetings include Capt. W. E. Elliot, M.P., Parliamentary Under-Secretary of Health for Scotland; Lieut.-Col. Gerald Leighton, O.B.E., M.D., Medical Officer (Foods), Scottish Board of Health; Sir George Newman, K.C.B., M.D., Chief Medical Officer, Ministry of Health; Professor T. Hudson Beare, M.Inst.C.E., Regius Professor of Engineering, Edinburgh University; and A. Horsburgh Campbell, M.Inst.C.E., City Engineer, Edinburgh.

The Lecture to the Congress will be delivered by Sir Leslie Mackenzie, M.D., LL.D., F.R.S.E., and the Popular Lecture by Charles Porter, M.D., B.Sc.

Visits have been arranged to works and institutions such as Infirmaries, Tuberculosis Hospitals, Child Welfare Clinics, Public Health Institutions, Baths, Markets, Slaughter Houses, and other places of health and historical interest in and around Edinburgh.

The Devon Diseases of Animals Committee has made arrangements to safeguard the county against foot-and-mouth disease during the ensuing months, when so many agricultural shows are being held. Exhibitors from outside the area have to sign a certificate of freedom from disease before their animals are dispatched to the showyard.

Right Aortic Arch in the Dog.

By Professor B. Gorton, M.R.C.V.S., M.P.S., Camden Town.

This case of right aortic arch in the dog is interesting for, as far as I can make out, such an arrangement has not been recorded. It was sent to me by Mr. Dartnall, M.R.C.V.S., of Cheltenham, who, in his accompanying note, states that the dog, a seven-months' old spaniel, was destroyed owing to the fact that since weaning he had been unable to assimilate solid food, having recurrent fits of vomiting every few days. Before weaning he was the best-looking puppy of the litter. Mr. Dartnall goes on to say that he was not in charge of the dog at any time so that he cannot give any account of symptoms shown during life. At the request of the owner he destroyed the animal. On *post-mortem* examination he found a dilatation of the œsophagus in the anterior part of the thorax, filled with fluid. This dilatation was due to an unusual course of the aorta, which was on the right-hand of the œsophagus and trachea. These latter were thus between the aorta and the pulmonary artery ventral to the ligamentum arteriosum. The ligament pressed upon the œsophagus in such a way as to bring about constriction, with consequent obstruction to the passage of solid food. This explained the symptoms exhibited by the dog.

I have carried the examination of the parts further, with the following results: The trachea showed no marked narrowing, any small deviation being due to a slight displacement of the cartilages brought about by pressure. The lungs, which in cases in the human subject are sometimes found to be transposed, were normal, nor was there any transposition of the abdominal viscera. With regard to the primary branches of the aorta, some interesting features came to light. The typical arrangement in the dog is that two large arteries arise from the convexity of the aortic arch. There are the brachio-cephalic and the left subclavian. The former gives off two common carotid arteries, no common trunk being present. In the case under review three large arteries were given off from the arch. The first arose from the convexity of the arch and formed a common trunk for the two common carotid arteries. It was half an inch long. Next, the right subclavian artery came off, quite close to the bicarotid trunk. The third branch, the left subclavian, left the aorta on its left face immediately dorsal to the ligamentum arteriosum. This branching of the aorta is not in accordance with what is found in those cases of right aortic arch in the human subject, where there is no transposition of other parts, and where the first branch of the aorta is the left subclavian. It approaches those in the human in which the common carotids are given off before the subclavians, but it differs in that the right subclavian is given off before the left.

The presence of a common carotid trunk is not surprising, as the common carotid arteries have such a varying arrangement in different species of animals that we expect to find considerable variations in any

one species. The origin from the aorta is of interest, as in both man and the domestic mammals, at least, both carotids do not arise from the aorta directly.

The chief points of interest concerning the branching of the aorta are :—

1. That both common carotids arose directly from the aortic arch.

2. That the subclavian arteries were given off in the usual order and not in the reverse way.

Little need be said regarding the dilatation of the œsophagus, as this was only the result of constriction caused by the ligamentum arteriosum. It may be mentioned, however, that it was not at any time apparent during life, though the *post-mortem* examination might have led to the conclusion that it should have been, especially if distended with food.

Frank Garnett Memorial Fund.

FIRST LIST OF SUBSCRIBERS.

	£	s.	d.
Sir John M'Fadyean	20	0	0
J. B. Buxton	10	10	0
J. W. Brittlebank	5	5	0
A. Gofton	5	5	0
W. D. Rees	5	5	0
C. Roberts	5	5	0
S. H. Slocock	5	5	0
E. Alfred West	5	5	0
J. Abson	5	0	0
Sir Layton Blenkinsop	5	0	0
J. Clarkson	5	0	0
J. F. Craig	5	0	0
S. H. Gaiger	5	0	0
W. S. King	5	0	0
G. H. Locke	5	0	0
G. P. Male	5	0	0
Sir John Moore	5	0	0
P. J. Simpson	5	0	0
Trevor F. Spencer	5	0	0
Sir Stewart Stockman	5	0	0
Henry Sumner	5	0	0
C. Blackhurst	2	2	0
J. H .Carter...	2	2	0
J. C. Coleman	2	2	0
R. Hughes	2	2	0
P. J. Howard	2	2	0
G. H. Livesey	2	2	0
J. W. McIntosh	2	2	0
J. McKinna	2	2	0
R. V. Thatcher	2	2	0
J. Willett	2	2	0
G. H. Wooldridge	2	2	0
T. Dunlop Young	2	2	0
W. F. Barrett	1	1	0
J. R. Baxter	1	1	0
A. H. Berry	1	1	0
A. J. Beeson	1	1	0
E. W. Bovett	1	1	0
O. A. Ducksbury	1	1	0
J. Lawson	1	1	0

(Continued at foot of first column next page.)

The Veterinary Record.

13th June, 1925.

THE ANNUAL MEETING OF THE R.C.V.S.

The annual general meeting of the Royal College of Veterinary Surgeons of 1925 will always remain in the annals of the profession as a sad failure. Out of a body of professional men numbering 3,499 (of whom 32 are members of Council) some 25 veterinary surgeons attended to do honour to Earl Haig and to transact the business of the meeting. This small gathering, together with the Secretary, Solicitor, Auditor, a clerk, and four or five reporters looked thin indeed in the Council Room ; the rows of empty chairs bearing silent, but void testimony to the apathy and lack of proper pride amongst members of our profession. It was indeed painful to those who have hoped and longed for better things that the profession should thus have advertised its failings, not only to the new associate, but to the public, through the Press.

Comment was made, that the President was not supported on the platform by the Vice-Presidents (one of whom was present in the Council Chamber), while it was also noticed that neither the solicitor nor the secretary nor the auditor was accommodated with platform seats, even at the business portion of the meeting. One would like to know the reason—if there was a reason—for this. After all it was the general meeting of the Royal College at which the officers are expected to be seen in their places. No one would begrudge Sir John M. Fadyean as " father of the Council " his place of priority when Earl Haig was to be admitted an Honorary Associate, but why two ordinary members of the Council should have occupied seats in the place of the vice-presidents and officers of the College seems incapable of reasonable explanation. Ordinary members of the profession who feel a loyalty to the Royal College, do not like this sort of thing, for while everyone is ready to acclaim the Royal Army Veterinary Corps, there was no especial cause why distinguished members of it should supersede the officers of the Royal College, on this, the gala day of the Royal College and at a function which was essentially the business of the Royal College and of it only.

The meeting transacted its business silently and without comment—a disappointment to a very popular President, to an enthusiastic Secretary, and to all present. It is to be devoutly hoped that such a depressing experience will not be repeated in the future.

CLINICAL AND CASE REPORTS.

Sequestration Dermoid in a Bitch.

By Tom Hare, M.B., Ch.B., B.V.Sc., M.R.C.V.S.,
The University of Liverpool.

Subject.—A collie bitch, aged nine years.

Clinical History.—The owner stated that about nine months ago a small lump appeared on the belly. Its growth was gradual and apparently caused no pain or discomfort to the animal. During the last week or so the lump became more pronounced. The owner had never observed any laceration or injury over the part previous to the appearance of the lump. He stated that the bitch had never been pregnant.

On examination, a subcutaneous cystic swelling was found to occupy the region of the last nipple just to the right of the mid-line of the abdomen; no other abnormalities were observed in the animal.

Operation Results.—At the operation, performed by Mr. F. S. Warburton, of Liverpool, the cyst, situated entirely within the subcutaneous tissues without involvement of the mammary gland, was enucleated by blunt dissection following simple curvilinear skin incisions. The patient made an uneventful recovery. The specimen was sent to the laboratory and examined on the same day.

Pathological Report.—The unruptured tumour is a unilocular cyst, about the size and shape of a cricket ball, with a tense thin fibrous wall. About one-third of the circumference of the sphere is clothed with tensely-stretched normal skin; this area of skin contains the shrunken nipple. The weight of the unruptured cyst is about 260 grams. The smooth inner wall of the cyst contains dotted here and there a few small fleshy papillæ, from each of which one or two short colourless hairs project into the lumen.

Microscopically, the cyst wall is seen to consist of a relatively thick layer of loose adipose connective tissue, well supplied with blood and lymph vessels. Outwardly, this wall merges into a thin fibrous layer which contains some bundles of smooth muscle. The lumen of the cyst is lined by a well-formed layer of simple squamous epithelium showing desquamation of keratinised cells into the lumen. The papillæ are seen to consist largely of bundles of plain muscle, lined by a single layer of flattened cells which merge gradually into the squamous lining of the smooth part of the wall. Traces of hair roots, but no evidence of sebaceous glands, are to be observed in the papillæ. One part of the wall shows two small foci of simple necrosis surrounded by early granulation tissue.

There is no evidence of malignant change.

The cyst contains 210 c.c.s. of a dark brown odourless turbid alkaline fluid, having a specific gravity of 1024. The colour is due to the presence of blood pigment in the form of alkaline hæmatin. The fluid contains 2.6 grams per cent. of protein in the form of albumin and globulin, and 0.12 grams per cent. of fat. No reducing substances were present. The deposit reveals large quantities of cholesterol, also crystals resembling ammonium magnesium phosphate.

No organisms are present in direct smears of the deposit, while culture media remain sterile after seven days' incubation.

Conclusions.—(1) The growth is a sequestration dermoid arising secondarily to the inclusion of epidermis within the subcutaneous tissue.

(2) In all probability the inclusion followed some simple injury, such as a stab wound produced by a thorn or barbed wire.

(3) The hæmorrhage into the lumen, together with the patches of inflammatory changes in the wall of the cyst, probably followed some recent injury to the "lump," and might account for the "more pronounced growth during the last week or so."

(*Continued from previous page.*)

	£	s.	d.
W. Pauer	1	1	0
D. S. Rabagliati	1	1	0
A. Leslie Sheather	1	1	0
C. H. Sheather	1	1	0
J. H. Taylor	1	1	0
E. C. Winter	2	2	0

A Further Note on the Toxicity of Sea Water to Bovines.

By Major G. W. Dunkin, M.R.C.V.S., D.V.A.

In June, 1922, I presented a small communication to a meeting of the South Eastern Division of the "National" on the above subject. This was published in the "Veterinary Record," of July 8th, 1922.

As stated in this paper, the circumstance which brought the subject to my notice was the pending litigation between certain stock owners and a Local Authority. The former claimed compensation for loss of cattle which they alleged was due to poisoning by sea water which the cattle had drunk and which had percolated through a damaged sea wall into the marshes occupied by the beasts.

As far as I have been able to ascertain, there are no published cases of poisoning by sea water, and generally literature on the subject is lacking.

This is all the more remarkable since it would appear that many veterinary surgeons have, at some time in their career, been asked to attend cases of alleged poisoning from this cause.

During the discussion of the paper referred to above, several members took part, notably, Messrs. Ebbetts, T. F. Hogben and E. Morgan, The information which these gentlemen brought forward rather suggested to one that they had had cases of sea water poisoning to deal with. There was, however, a complete absence of evidence contraverting the opposite theory. The opinion would appear to exist in the minds of many stockowners that sea water is not only a poison but a fatal one. It would be as well to add, at this point,

that my references to sea water infer that it is unpolluted.

During the present year I have had an opportunity of satisfying myself on certain points and I have arrived at the following conclusions :—

(1) Under ordinary circumstances cattle will not drink sea water.

(2) When suffering extreme thirst cattle will take a certain amount and will then definitely refuse to touch it.

(3) When such quantities (two to three quarts) are taken the only symptoms observed are the passage of hard black fæces and rapid emaciation.

(4) In my experience the utmost sea water an average beast will take per day, however thirsty, is three to four quarts.

(5) The rapid emaciation is due to lack of water and not to the sea water which has been taken.

(6) Four small beasts which normally drank 28-30 gallons of water daily only drank one gallon of sea water in three days.

(7) All beasts remained otherwise healthy and no untoward effects were observed other than emaciation (a suggested cause of which is propounded above) and the passing of hard black fæces.

Conclusions.

Cattle will not under ordinary circumstances, or even when suffering extreme thirst, drink sea water in sufficient quantity to cause death.

In a few cases only will they drink sufficient to cause constipation.

This latter condition rapidly disappears when the ordinary routine diet is resumed.

I have to acknowledge my grateful thanks to Mr. Ernest Morgan, of Faversham, and to Mr. George Bartlett, for the assistance they have rendered me.

References.

Abstract— *Veterinarian*, 1870, p. 635.
Lander— *Veterinary Toxicology*, p. 80.
Suffran— *Jnl. Comp. Path. and Therap.*, 1910, p. 71.
Dunkin— *Veterinary Record*, July 8th, 1922.

Protection from Anthrax.

Colonel Day asked the Home Secretary whether he was aware of the fact that, at a recent inquest held in Southwark, it was proved that the death of a docker was found to be due to anthrax, contracted through dust rising from dry hides; were all the statutory precautions being taken at wharves where these hides were handled; and was he prepared to issue an Order for the compulsory sterilisation of all hides, with a view to minimising in every possible way the danger of anthrax infection.—Sir W. Joynson-Hicks replied: There have been two recent cases in this area. The statutory precautions applicable are those contained in the Hides and Skins Regulations made under the Factory and Workshops Act, 1901, and the Chief Inspector of Factories informs me that these are in general well observed, and that neither of the cases referred to was due to any breach of the regulations. I regret that it is not practicable to issue an Order as suggested, as there is at present no known effective method of sterilising hides which does not seriously damage them for commercial purposes.

Annual Meeting of the Royal College of Veterinary Surgeons.

Hon. Associateship Diploma Presentation to Earl Haig.

The eighty-second annual general meeting of the Royal College of Veterinary Surgeons was held at the College, 10 Red Lion Square, W.C.1, on Thursday, June 4th, 1925, the President, S. H. Slocock, Esq., being in the chair. There were present, Major General Sir L. J. Blenkinsop, Messrs. Carter, Dyer, Gooch, Professor Gorton, Messrs. Harrison, Hay, Livesey, McIntosh, McKinna, Major General Sir John Moore, Messrs. Rees and Revill, Captain Ross Grant, Messrs. A. L. Sheather and S. L. Slocock, Major General Sir F. Smith, Mr. T. F. Spencer, Sir Stewart Stockman, Messrs. Villar, West, J. Willett and Woods, and Lieut.-Col. T. D. Young, together with the Secretary, Mr. F. Bullock.

Apologies for absence were received from Messrs. J. Abson, J. Coleman, R. Hughes, F. T. G. Hobday and W. S. King.

The minutes of the previous meeting, having been printed and published, were taken as read and duly signed.

Field Marshall Earl Haig was then introduced to the President by Sir L. J. Blenkinsop. Earl Haig was warmly welcomed by the President and the company.

The President: We now proceed to the presentation of the Diploma of Honorary Associate to Field Marshall Earl Haig, K.T., G.C.B., O.M., G.V.C.O., K.C., I.E. It is within the powers of the Council of the Royal College of Veterinary Surgeons, under the supplemental Charter of 1876, to give the Diploma to an Honorary Associate, such gentleman being a foreign member, or a distinguished gentleman in art. The Council decided some time ago to confer that degree to H.R.H. The Prince of Wales, which his Royal Highness graciously accepted. The Council latterly desired to honour our two great soldiers, the Earl of Ypres and Earl Haig. We all regret that Earl of Ypres' life has not been spared long enough for him to take the Diploma, as he desired at the Annual Dinner. Earl Haig has done us the honour of being present with us to-day. (Applause). It is not for me to try to enlarge on what good Earl Haig has done. It would be like attempting to paint the lily. Earl Haig is a Field Marshal; that, in itself, speaks wonders. Earl Haig has received at the hands of his Majesty the greatest honours that he could confer. Earl Haig is a great soldier. He appeals to us as a great and typical English gentleman. (Applause). A very fine sportsman, he has been a distinguished polo player; a great cavalry leader, he has been in contact with very many men of our profession. Earl Haig was in charge of the Western Front, and had, I understand at one time as many as a million animals under his command. At all times he was friendly with the R.A.V.C. (Hear, hear). Being so great a sportsman, he was a great horseman, and therefore, was naturally a horse lover. He came

into contact with men of the corps, and one and all seemed to bear a respect—of almost hero worship—for him. Every man speaks of him in a tone of affection. One of the things that our profession has always lacked, and has always wanted is appreciation. (Hear, hear). And the only time that appreciation was granted was during the Great War. Fifty per cent. of the effective members of our profession did service. The animals at one time numbered a million, and I am given to understand that the wastage of these horses was below the average in civilian life. That, in itself, is, of course, a great credit, but our thanks are due to those in high office for giving them the facilities for carrying on the treatment of these animals. I have very few words to say, except to ask his Lordship to accept the honour we desire to confer on him, and I wish to assure him that we appreciate that the honour we confer is not so great as the honour he confers on us in becoming an Honorary Associate of the Royal College of Veterinary Surgeons. (Applause). It is the desire, I am sure, of every member of the profession, that we may see him among us for many years, and that he may come into contact with us now and then. (Loud Applause).

EARL HAIG: Mr. President and members of the Royal College of Veterinary Surgeons, I am not much of a speaker, but I cannot come here to-day and receive this very high honour without saying a few words of very grateful thanks for the honour of being made an Honorary Associate. When your President refers to what the Corps did in France, I feel again—what I so often felt—how much we all owed to the splendid fellows who looked after the horses in France. It is on record what a Tremendous number of horses were saved by Sir John Moore and those under him. It was perfect. It was quite an education, when I last paid a visit to the hospital to see how things were going.

In accepting this high honour I feel that it is those whom I represent whom you are honouring. You are honouring those excellent fellows who did so much for me that, if I lived to be a very great age, I could never do enough for them. The officers and men of the Royal Army Veterinary Corps did their duty, and they worked with a will night and day regardless of themselves and made every effort in order that we might be successful. Some enthusiasts to-day talk about the probability of horses becoming extinct and prophesy that the aeroplane, the tank and the motor-car will supersede the horse. Personally I always feel that these great inventions somehow or other, cure themselves; what I mean is that they always produce an antidote. In this connection, I hear of a tremendous discovery in the way of a gun of great range and far greater accuracy, and so it seems to me that the need for horses in the future is likely to grow. How is the infantryman, with his full kit (not to mention the thousand and one things the poor fellow has to carry) how can he hope to take advantage of a decisive moment, created by fire from machine guns of a range of 5—6,000 yards? Surely, it seems to me, it is by utilising the horse and equipping our light troops properly, mounted troops and mounted artillery, that we are likely to take advantage of these modern weapons. I am all for using the air-plane attacks, but they are only accessories to the man and the horse, and I feel sure that the time is at hand when we will find just as much use for the well-bred horse as we have done in the past, therefore you must not be despondent when we hear that the days of the horse are over. I cannot sit down without referring to my old friend Sir Layton Blenkinsop. We went through the South African War together, the charge at Kimberley, and we had to do with the Boers, and their mounted tactics. I think that we may learn a great deal if we only ponder over the lessons of that time. We can do a great deal to improve our organisation at present and lay the seeds for future successes when the necessity arises.

May I thank you, Mr. President, for the very kind words you used about myself, and I thank you all for this very high honour. (Applause.)

The PRESIDENT: Earl Haig has very kindly come with us to-day, and we thank him fully. He has many engagements, and will be glad if you will now allow him to leave the meeting.

Earl Haig then left the meeting, after shaking hands with many of those present.

ELECTION OF COUNCIL.

The SECRETARY read the report of the Chartered Accountants, and duly declared the first eight named in the subjoined list to be elected as members of Council.

Name.	*Votes.*
S. H. Slocock	864
F. T. G. Hobday	845
J. McKinna	811
P. J. Simpson	807
W. S. King	752
J. H. Carter	716
Trevor F. Spencer	654
T. Dunlop Young	615
E. Alfred West	551
A. W. Whitehouse	429
C. Blackhurst	344

Continuing, the PRESIDENT said: It is usual to return the votes to the Scrutineers, but this year we had no scrutineers. The work has been undertaken by the auditors.

THE ANNUAL REPORT AND FINANCIAL STATEMENT.

Mr. WILLETT: I move that the annual report be received.

Mr. GOOCH: I second that.

The report was then taken page by page.

The SECRETARY: I wish to call the attention of members present to the new Memorial Plaque, which is displayed here, to which reference is made in the annual report. The Council thought it very fitting that the plaque should be erected on the walls of the Council Chamber, to commemorate the services of those very great pioneers, William Moorcroft, William Youatt and William Percival. (Applause). The reference to the Wortley Axe bequest has already

passed under your notice—that, under the will of the late Professor, the sum of £400 to the College for the purpose of providing portraits of the late professors Brown, Simmonds, Spooner and Varnell, two of whom—Professors Simmonds and Spooner—were among the petitioners for the Royal Charter of 1844. The portraits which Mr. Harold Speed has now completed are in the room and a request is made on behalf of the trustees for the fund that the Council shall endeavour to find room to display the portraits in some suitable place, preferably on the walls of the Council Chamber. (Applause).

The PRESIDENT: The portraits have been accepted in the name of the profession.

The annual report and financial statement were received and adopted.

The PRESIDENT: This concludes the business of the meeting.

Mr. MCKINNA: Mr. President, I should like to acknowledge the work of your year of office, which you have so admirably fulfilled, and I am sure the members of the profession—I am sorry that they are not here in larger numbers—appreciate what you have done. (Applause). You have had a distinguished gentleman to receive to-day—a very fitting ending to your year, and I am sure that it is just that you should have had the honour of representing the profession to-day. I, therefore, think it will be the wish of the profession that we should acknowledge the services you have rendered during the past year. (Applause).

Mr. CARTER: I beg to second that.

The PRESIDENT: I am not good at talking, as you are aware, but I must, gentlemen, return my thanks for this favour. I am going to talk upon another occasion, but I thank you very much, partly for the support you have given us to-day, although I regret the fact that there was not a large meeting. I think that members should come to every annual meeting, for the annual meeting is essentially a meeting at which this room should be filled to its utmost capacity. It has never been full on such an occasion, but I had earnestly hoped it would have been this time.

The meeting then terminated.

KING'S BIRTHDAY HONOURS.

In the King's Birthday Honours List (Colonial Office) appears the name of Mr. Frank Arthur Verney, F.R.C.V.S., Chief Veterinary Officer, Basutoland, as the recipient of the honour of the Order of the British Empire.

An open meeting was held in the Glasgow Veterinary College on Wednesday, 20th May, under the auspices of the G.V.M.A. Dr. Whitehouse, Principal of the College occupied the Chair.

Mr. J. Gartshore-Scott gave an address on "Veterinary Jurisprudence" (Horse Warranty) which proved most interesting and very valuable, and was greatly appreciated both by students and practitioners.

ABSTRACT.

(Report of the Imperial Bacteriological Laboratory, Muktesar, India, for the two years ending the *31*st March, *1924*, by J. T. EDWARDS, B.Sc., M.R.C.V.S.).

Staff. For the first time since the early stages of the War all the research appointments in the laboratory were filled. This was a most satisfactory change after the lean war and post-war years, during which the superior staff comprised at the most two officers.

Administration. The peak of the ever increasing rise in the cost of fodder, transport and labour recorded in the immediately preceding reports was reached and passed in the years under report. At the same time, the previous urgent demand for more and more rinderpest serum recorded in the previous annual reports diminished very considerably for reasons dealt with under another head. These two factors helped to relieve many of the very difficult problems which had arisen at Muktesar from its over development into a very large scale serum producing laboratory, far out of proportion to what was ever intended or anticipated at its inception, and for which it lacked many essential features, largely on account of its somewhat inaccessible location in the Himalayas.

Attention is again called to the danger to the station if the single oil engine breaks down. It is dependant on this engine for its water supply and electrical power.

An account is given of the vicissitudes of the branch laboratory at Bareilly. The Kurgaina site, which had been utilised for some years, was abandoned and the new Izatnagar site was taken over. This has led to a very important change in policy. It is proposed to carry out the bulk of the large scale serum production in future during the cold weather at Izatnagar and so relieve Muktesar from such heavy routine work, so that intensive research may be prosecuted there instead.

Finance.

	1922-23. Rs.	a.	p.	1923-24. Rs.	a.	p.
Income from sale of laboratory products	5,02,396	14	0	4,90,721	7	10
Expenditure ...	7,55,815	6	8	6,96,322	2	1

With effect from the 1st April, 1922, an increase in 50 per cent. in the prices of the laboratory products was sanctioned. It was hoped that this would equalise the budget of the laboratory. The demand for serum, however, diminished considerably for the following reasons:—

(*a*) These were light years for rinderpest, in marked contrast to the immediate post-war years.

(*b*) Local authorities made cuts in their budget allotments for the purchase of serum as part of their application of the "axe" in carrying out routine economies (?).

(*c*) In the Madras Presidency a charge of eight annas per head of cattle was imposed upon the

owners when the serum was used in the scene of an outbreak of rinderpest.

Instruction.

(*a*) *Training of Officers from the Provincial branches of the Veterinary Services for promotion to Imperial grade.*

A class of six officers was started at Muktesar to test the merits of a scheme to train these officers in India instead of deputing them to Europe for study. A very comprehensive curriculum for a two years course is described. In addition to lectures and practical work in hygiene, general bacteriology, pathology, helminthology, entomology, epizootiology, preventive medicine and toxicology at Muktesar, the class went on a conducted demonstration tour to the Agricultural Research Institute, Pusa, the Government Cattle Farm, Hissar, the Punjab Veterinary College, Lahore, the Sheikhupura Veterinary Hospital, Rakh Chandrai Dairy, Lahore Municipal Slaughterhouses, the Renala Stud and the Ferozepore Slaughterhouses.

(*b*) *Short Courses of Instruction for Officers of the Imperial Branch of the Indian Veterinary Service and of the Royal Army Veterinary Corps in India.*

Shortage of Officers in India prevented the deputation of a sufficient number to justify the formation of a class for an organised course of study. Five officers were, however, trained for short periods at various times.

Production of Sera and Vaccines, etc.

A large quantity of rinderpest serum and hæmorrhagic septicæmia serum was produced at the Izatnagar branch laboratory. This serum was transported to Muktesar for storage and issue as this course was found to be more economical than the installation of cold storage at Izatnagar.

The actual amounts prepared of these products are shown in the tables below.

Vaccines consisting of germ free filtrates of strains of the *black quarter* organism obtained in morbid material from various parts of the country were prepared and issued. These superseded the spore vaccine similar to that of the first vaccine of the original Arloing method which had hitherto been issued. One hundred and forty litres of black quarter serum were prepared.

There was a steady demand for *anti anthrax serum.* The Director points out that the disease is probably very much more prevalent than the reports of the disease indicate. In view of the threat of an embargo upon the importation of East Indian wool hair and hides unless steps be taken to eliminate infection, as a result of the action taken by the Special Anthrax Committee of the International Labour Organisation of the League of Nations, the necessity of vaccinating against the disease in some localities was considered. However, to date no spore vaccine had been prepared.

Mallein for the intra-dermo-palpebral test for glanders similar to the French product "malleine diluee au $\frac{1}{4}$," and concentrated mallein (to one-tenth) for the ophthalmic test were prepared in addition to ordinary mallein for the subcutaneous test. Tests of the mallein for the intra-dermo-palpebral test prepared showed that it was at least as efficacious as the product imported from France, which had been in use hitherto.

In addition to *tuberculin* for use in the subcutaneous test, concentrated tuberculin was prepared for the intra cutaneous test in the anal fold and avian tuberculin was prepared for testing cattle suspected to be in the early stages of Johnë's disease.

Research.

Rinderpest.—*Etiological Studies.* This work was undertaken on a very large scale. A series of 65 "chuppers" (mud huts) were specially constructed in various places, in each of which a susceptible animal could be isolated and observed without risk of accidental infection during the period while it was under test.

It was found that virulent rinderpest blood stored at body temperature usually became inert within three days when exposed to air, but survived for ten days or more when covered with a seal of liquid paraffin. When kept in an atmosphere of hydrogen virulence was lost as quickly as in atmospheric air. In an atmosphere in which the carbon dioxide tension approximated that of the circulating blood, the virus survived as long as it did under the paraffin seal.

Virulent blood, diluted with five times its bulk, became inert in about a day at body temperature, even under a paraffin seal. However, even high dilution in a slightly diluted serum or peptone solution adjusted to near the hydrogen—ion concentration of the circulating blood, permitted relatively long survival of the virus.

It appeared that the rapid destruction of the virus in blood exposed to air was chiefly due to the transformation that took place in the blood, owing to the escape of carbon dioxide gas. In old stored serum, stabilised to the reaction of normal blood by the addition of acid, the period of survival of the virus in small amounts of added virulent blood was long. The virus was very sensitive to an unfavourable reaction either in the alkaline or the acid direction.

There was no need to invoke the action of a hypothetical lysin to account for the apparent rapid destruction of the virus in blood exposed to air such as Frosch and Dahmen considered to be an important factor in their experiments when attempting to cultivate the virus of foot-and-mouth disease.

"Differential high speed centrifugation of hæmolysed virulent blood suspended in bland fluids of various specific gravities, according to the method published by MacCallum and Oppenheimer (1922), for the demonstration of the particulate nature of the small pox virus, brought about only with great difficulty any signs of sedimentation or flotation of the virus; nevertheless, the results were suggestive that the virus was organismal and capable of separation and not fluid."

It was found that intra-ocular injection of the rabbit with virus caused a change in the iris in a few days somewhat similar to that seen in specific ophthalmia in horses. Massive intravenous injections of virulent

ox blood into rabbits caused a scarcely perceptible rise in temperature on the following days. Passages through a series of rabbits led to a very pronounced thermal reaction in the injected rabbits, usually reaching its maximum on the second or third day and then subsiding rapidly. Outward clinical disturbances were not appreciable and the mortality was low. In this way several strains were maintained. "The infectivity of each strain of the rabbit virus was tested upon cattle from time to time and it seemed to remain virulent throughout; the degree of reaction of the cattle varied from types that were almost symptomless or merely febrile in character and left a powerful immunity, to those which were nearly as severe as the disease set up by the injection of virulent ox blood, but there was no progressive degradation of virulence. The modified virus never became 'safe' for the vaccination of cattle by itself, although it was generally much feebler and had the advantage of being a 'pure' virus—not contaminated with accompanying virulent piroplasms."

By means of Warthin-Starry's hydrogen peroxide, silver agar method of treating blood films, forms were seen under the microscope, which resembled the minute pleomorphic granule-vibriolepto-spirillary forms depicted by Bordet (1910) in his researches into the morphology of the organism of contagious bovine pleuro pneumonia. Examination of impression preparations of brain, kidney and liver of infected rabbits confirmed these findings.

It was found that rinderpest virus rendered inert for cattle by certain agencies (over one-half per cent. carbolic acid or extensive dilution), was still infective for rabbits, the virus not being actually killed, but only being degraded. Intensive passage through rabbits brought back the virulence for cattle.

Cultivation. "Small lengths of closed Chamberland candles containing salt solution or peptone water were placed inside the peritoneal cavities of cattle which were then infected with rinderpest. At the height of the reaction the candles were carefully withdrawn and dropped into tubes containing sterile molten vaseline, which was then allowed to set and the tubes incubated. Candles were withdrawn for the examination of their contents from time to time; stained preparations showed a development during succeeding days of short vibrionic structures to distinct leptospirillary forms. A feature of the stained forms was that they possessed feeble powers of retaining the stain and generally became decolourised in a day or two. The candle fluid was avirulent for cattle, and the injected cattle subsequently possessed no immunity. Only in one case did a bull show a distinct fever, several days after injection and it was then immune to rinderpest. Passage of candle fluid intravenously through the rabbit restored it to its state of virulence for the ox."

"In the first experiments the method of attempted cultivation was to sow the candle fluid into serum obtained with the strictest precautions to prevent escape of its carbon dioxide into the air and separated as quickly as possible from the solid blood clot, and then placed under paraffin in sterile bottles. Subinoculations were made from this generation into one or two per cent. bacto-peptone in Fleisch's (1922) modification of Ringers solution, with a fragment of fresh sterile potato added to increase its nutritive qualities. The third subculture in a large flask of this medium became restored to rinderpest after passage through the rabbit, but the material had no vaccinating effect upon cattle."

In subsequent experiments the cultural part of the work could not be repeated.

Mosquito transmission experiments were undertaken with negative results.

Immunity Researches. It was found that the procedure of so-called hyperimmunisation in the production of an anti rinderpest serum is not analagous to the practice, which goes by the same name, adopted in the manufacture of anti sera against the pathogenic bacteria and toxins. The initial dose of virus appears to produce a maximum diffusion of the virus throughout the body which sets up a maximum state of immunity on the part of the tissues, so that further introduction of virus has little or no effect.

It was found that the *duration* of anti-body secretion (in Madson's conception of the formation of anti-bodies) appears to be a function of the intensity of the morbid reaction which the animal is able to deal with effectively. When the original immunising reaction of the serum producer is "blocked out" or nearly "blocked out" with a large dose of serum, a potent antiserum is obtained only for about four weeks after the injection of the virus, whereas after a mild but decided reaction, a potent serum is obtained for about eight weeks or longer after the commencement of the apyrexia.

Experiments were undertaken with encouraging results on the action of the injection of the salts of certain metals for the stimulation of antibodies.

Comparative experiments on the production of rinderpest serum by subcutaneous, intraperitoneal and intravenous injection for the hyperimmunising doses were carried out. The intravenous route caused high mortality on account of agglutination of red corpuscles, which is a different problem in cattle on account of the number of serological groups that occur. The intraperitoneal route caused high mortality and the serum produced was of about the same potency as that produced when the subcutaneous route was used.

It was finally decided to discontinue the hyperimmunising injections and to rely on the long period of immune body production caused by an initial moderately severe reaction.

Haemorrhagic Septicaemia. Hitherto there was some hesitancy about the estimation of the potency of the serum and vaccine issued, because laboratory tests on small experimental animals had proved to be rather disappointing. It has now been found that the large naturally susceptible animals—cattle and buffaloes—can be used successfully for this purpose.

Immunisation by the intravenous route was found to set up considerable mortality and arthritis, while

local disturbances occurred when the subcutaneous route was used. It was found that the best method of obtaining the bacterial growth for injection was in a liquid medium made on the principle of Martin's booth (peptone obtained by auto digestion of pigs, stomachs and liver, according to the method of Meyer and Stickel, buffered with phosphate, added to muscle or heart extract, heated to 80°C. and passed through a bacterial filter for sterilisation).

" The indications at the close of the period under report were that the most economical procedure would be to submit the animals initially to simultaneous inoculation with a large dose of good protective serum and a suitable relatively large quantity of highly virulent antigen."

Many normal buffaloes were found to possess an unexpectedly high agglutinating titre and the apparent natural immunity of the species ran parallel to the degree in which this property was demonstrable in the blood stream.

Passage of a virus which had become degraded from prolonged artificial cultivation :—

(*a*) through cattle or buffaloes exalts it for bovines.
(*b*) through normal susceptible rabbits exalts it for rabbits, but attenuates it further for bovines.
(*c*) through rabbits that have passed through a natural outbreak of rabbit septicæmia attenuates it for rabbits and bovines.

The serum prepared for use against bovine hæmorrhagic septicæmia had no effect in mitigating an outbreak of rabbit pasteurellosis.

Contagious Bovine Abortion. It was found that 50 per cent. of the breeding animals at the Government Military Dairy Farms were infected and that the rate of clinical abortion was over 20 per cent.

Tests on Indian cattle maintained in the open in the usual conditions in which cattle are kept in India, showed an infection rate of about 10 per cent. and an almost negligable specific abortion rate.

Buffaloes possess a high degree of resistance and indigenous cattle are less susceptible to clinical abortion than cattle with a considerable admixture of European blood.

Vaccination with an avirulent strain of *B. abortus*, which had been maintained for a very long time on culture media, gave disappointing results. Later a virulent strain recently isolated gave encouraging results after causing some anxiety before the dosage was suitably decreased.

Strangles. About fifty strains were isolated from samples of strangles pus and used in the production of vaccines and anti serum. Trials were carried out at two remount depôts.

In the 1922—23 season it was arranged " to inject incoming batches of young animals in segregation, at weekly intervals, first with a dose of anti serum and vaccine and then with two successive doses of increasing size of vaccine alone. After the lapse of nine days, the young horses were to be admitted into the main depôt and be exposed to infection."

In both depôts the animals were exposed to infection before the full course of treatment had been given. Tables are given which indicate that the mortality and morbidity rates were depressed by the treatment.

Arrangements were made to have more controls in the 1923—24 season and to try Dreyer's method for the preparation of a so-called " diaplyte " vaccine.

The results appear to indicate that prophylactic vaccination exerts an appreciable effect in depressing the incidence of morbidity and mortality from strangles and that continued treatment with the Dreyer's type of vaccine yields superior results.

Equine Contagious Abortion. An attempt was made to control the disease at the Hissar Cattle Farm by testing all the animals every three to six months and segregating the reactors. When carried out over a period of two years, success was not attained.

Surra. Tryparsemide failed to cure natural cases of surra in horses.

A virulent strain was obtained, which would almost invariably kill a buffalo in a few days. An adequate dose of tartar emetic intravenously during the septicæmia caused in the buffalo by this strain produced rapid recovery and a relapse was rare. Similarly, a suitable dose of bismuth phosphate in mucilage of gum acacia intravenously produces a rapid clinical cure in a buffalo.

" The treatment of animals with a relatively high natural resistance, such as cattle—and probably camels also must be reckoned as such—is therefore a comparatively simple problem, but the prospects of curing the very susceptible species of hosts, such as horses, do not seem to be very hopeful."

Mange. Sarcoptic mange in buffaloes was investigated.

" In experimental conditions it was found that the average number of eggs laid by an ovigerous female was 17—18, and that ten days was the maximum duration of life of this female. The interval between the hatching of the larva from the egg and the attainment of adolescence was 6—8 days. Ovigerous and pubescent females could withstand the adverse influence of separation from their host better than could the other stages ; males and small larva were most sensitive in this respect, nymphs and large larvæ intermediate. Exposure to sunshine prolonged the viability of the various stages, while cold produced the opposite effect. The action of 10 per cent. creosote in olive oil was fatal in twenty minutes at 31°C. for all males, nymphs and larvæ and the majority of pubescent and ovigerous females."

Eggs hatched in 1—2 days at summer temperature and 2—3 days at winter temperature. Eggs did not hatch at 25—27°C. if separated from the host for more that five days. After seven days at 10—13°C., no eggs hatched when placed on the host's body. 10 per cent. creosote in olive oil killed all eggs in contact for thirty minutes.

Tuberculosis. An officer was deputed to the laboratory by the Indian Research Fund Association to work on tuberculosis. Twelve calves of each of the following breeds of cattle were subjected to the standard form of artificial infection at Izatnagar during the cold weather season 1923—24.

(*a*) Hill cattle from around Muktesar.
(*b*) Plains cattle of Rohilkand " desi " breed (local United Provinces breed, mixed with Hariana and Gangs pari breeds).

(*c*) Buffalo calves from the Barielly District.

All the breeds exhibited a high degree of resistance. The buffaloes were more resistant than the ox calves.

Some of the ox calves of both breeds were, however, found to exhibit nearly as high a degree of susceptibility as that possessed by the average British calf.

Infectious Bovine Nasal Granuloma. The cause of "snoring" disease. The lesions are limited to the mucous membrane of the nostrils and are histologically similar to actinomycosis. A streptothrix was isolated culturally.

Bovine Coccidiosis. Nearly all cattle brought in from the vicinity were found to be carriers of coccidia in the alimentary tract. This condition was studied. It was found that in the course of clinical rinderpest, animals succumbed to a dysentery caused by the coccidia.

Piroplasmosis. Besides *Piroplasma bigeminum*, a small Piroplasm was of frequent occurrence in the cattle of the laboratory. This was studied in detail and was found to conform exactly to *Theileria mutans.*

The *post-mortem* examination of a bull which died after inoculation with the rinderpest virus, showed the lesions of East Coast Fever of African cattle. Microscopical examination of the lesions revealed in abundance structures quite indistinguishable from the so-called Koch's blue bodies and an extremely rich invasion of the red cells with piroplasms identical in appearance to *Theileria parva.* Five similar cases were found about the same time. Three more cases were found the following year and rare Koch's bodies were believed to be found in the large mononuclear cells of a living animal, that afterwards recovered. Transmission experiments by direct inoculation and by tick feeding failed. The conclusion is drawn that this represents an exalted strain of *Theileria mutans*, so that it has produced an infection like East Coast Fever, with the presence of plasmatic bodies in the lymphatic tissue.

Minor Researches. Bacterium viscosum equi was isolated from material for the first time in India.

"From the joint cavity of an aborted fœtus there was isolated in pure culture a hæmolytic streptococcus, pointing, contrary to the available authoritative evidence, to intra-uterine infection with this type of organism."

In the *post-mortem* houses the carcases of 2,222 animals were systematically examined in 1922—23 (cattle 1,248; buffaloes, 164; horses, 15; donkeys, 3; sheep, 10; goats, 7; dogs, 83; cat, 1; rabbits, 676; guinea pigs, 14; and pigeon, 1). In 1923—24, 3,318 animals were examined *post-mortem* (cattle, 1,449; buffaloes, 222; horses, 15; mules, 2; donkey, 1; sheep, 7; goats, 6; dogs, 8; rabbits, 1,591; guinea pigs, 13; rat, 1; and fowls, 3).

Attention is drawn to the urgent necessity for the appointment of a whole-time Helminthologist to the laboratory.

A note on Hæmorrhagic Septicæmia, by R. Branford, Superintendent, Government Cattle Farm, Hissar, is appended to the report.

This shows that since the young stock of the farm were inoculated early in the rains with hæmorrhagic septicæmia vaccine, there have been no deaths from the disease, whereas formerly they were heavy at the end of the rains and in the Autumn.

He points out that the disease is confined almost exclusively to young stock, at least 99 per cent. of deaths from the disease being in young animals.

Table showing amounts of various products prepared and issued, as compared with the average amounts of the previous five years.

1922—23.

Names of Products.	Doses Prepared.		Doses Issued.	
	1922-23	Average of Previous five years.	1922-23	Average of Previous five years.
Rinderpest Serum ...	2,000,661	2,980,239	1,937,552	2,840,010
Anthrax Serum ...	65,118	28,847	34,496	27,226
Hæmorrhagic Septicæmia Serum ...	204,714	149,556	226,998	145,011
Hæmorrhagic Septicæmia Vaccine... ...	273,100	118,846	273,100	118,846
Black Quarter Vaccine	63,000	20,300	57,550	24,080
Mallein	21,279	126,703	13,484	130,608

1923—24.

Name of Products	Doses Prepared.		Doses Issued.	
	1923-24	Average of Previous five years	1923-24	Average of Previous five years
Rinderpest Serum ...	3,309,027	2,951,086	1,986,399	2,813,527
Anthrax Serum ...	—	39,036	291,834	30,179
Hæmorrhagic Septicæmia Serum	253,004	146,807	221,174	152,524
Hæmorrhagic Septicæmia Vaccine... ...	177,600	150,041	177,600	150,041
Black Quarter Vaccine	29,600	32,900	40,600	32,125
Mallein	52,812	52,609	29,162	94,675

Table showing a summary of results of inoculations in the field, reported from the use of different products issued from the Imperial Bacteriological Laboratory, Muktesar, 1922—23—24.

For 1922—23.

	Number of Outbreaks in which Inoculated.	Number of animals which Died uninoculated in course of Disease.			Number of Animals Inoculated.			Number of Animals which Died after Inoculation.			Percentage of Deaths in Inoculated Bovines.
		Equines	Bovines	Others	Equines	Bovines	Others	Equines	Bovines	Others	
Rinderpest Serum	3,928	—	41,293	117	—	478,092	906	—	2,922	338	0·61
Anthrax Serum	145	14	1,589	124	274	10,502	1,854	2	18	5	0·17
Hæmorrhagic Septicæmia Serum ...	883	3	8,265	—	4	172,206	48	—	157	1	0·09
Hæmorrhagic Septicæmia Vaccine ...	868	—	1	—	1	200,838	—	—	—	—	0·0
Black Quarter Vaccine	601	—	2,980	—	—	45,347	—	—	54	—	0·11

For 1923—24.

Rinderpest Serum	3,921	—	37,832	1	134	413,147	366	—	2,343	20	0·56
Anthrax Serum	383	19	1,537	120	363	141,261	673	1	46	1	0·32
Hæmorrhagic Septicæmia Serum ...	1,052	—	9,546	17	12	171,366	47	—	95	—	0·05
Hæmorrhagic Septicæmia Vaccine ...	223	—	20	—	—	144,939	—	—	1	—	0·0
Black Quarter Vaccine	512	—	1,214	—	—	371,591	—	—	58	—	0·15

DIVISIONAL REPORT.

Eastern Counties Division.*

Annual General Meeting.

The forty-ninth Annual General Meeting of the Eastern Counties Division was held at the Royal Hotel, Norwich, on Thursday, 19th February, 1925, having been preceded by a Demonstration at Mr. H. P. Standley's Infirmary, by Mr. T. G. Heatley, M.R.C.V.S., of Woodbridge.

Mr. Heatley gave a demonstration on the technique employed in the treatment of endo-metritis and cervicitis, which, he said, was very frequently a cause of failure to breed in cows. For the purpose of demonstration there were two Jersey cows available in Mr. Standley's veterinary hospital.

In opening the subject, Mr. Heatley said it was really rather difficult to know where to break ground, as the subject was a very wide one, and could be approached from so many points. In his opinion, it was one of the most important matters to veterinary surgeons who had herds of cattle under their charge, as leucorrhœa, or what was commonly spoken of by cow keepers as the "whites," was apparently much more common than formerly—probably due to the enhanced value of dairy cattle during recent years, largely because of the operations of the milk recording societies. In years gone by, if a cow suffered from "whites," it was recognised that there was little chance of her breeding, and she was fattened for the butcher. Now, when cows were much more valuable, a cow so affected was a heavy milk-recorded cow, or a foundation stock cow, or a full pedigree cow, and everything possible was done to get that cow to breed. She was, therefore, retained in the herd, and a very great source of danger to other animals, either through the medium of the bull or by the standings being contaminated with the discharges, from whence the germs might gain access by the various channels by which organisms secured entrance to the body.

Mr. Heatley quoted from the current number of a fashionable breed journal in which was an article treating of leucorrhœa or "whites," whence it was recommended that the cow should be syringed daily with a mild antiseptic and, if the trouble still persisted, it was probably located in the womb, and then to secure the services of the veterinary surgeon, asking him to "swab" the uterus with iodine. "Of course," said Mr. Heatley, "anyone who has had much to do with cattle knows that this is a physical impossibility. If these instructions appear in the lay press, the people who would read such articles are very knowledgable men, and it behoves every veterinary surgeon to be able to meet such a suggestion in a scientific and practical manner." My object to-day, therefore, is not so much to diagnose the actual cause of the sterility of the two cows we have here as to show the members how I should proceed to examine such cases, and the treatment which might be adopted.

There is a condition known as granular vaginitis in cows, which is classed as a definite disease, and which may be a cause of sterility. Well, I may be wrong, but I have formed the opinion from clinical experience that this granular vaginitis is only a local manifestation of endo-metritis and cervicitis.

Formerly, before I had seen as much, I frequently treated granular vaginitis as a separate disease by frequent syringing of the vagina by weak antiseptics, but with not very satisfactory results. I well remember one case in which I was consulted as to the cows turning to the bull, and I diagnosed bad granular vaginitis and gave instruction as to treatment. The owner, however, was carried away by the very plausible, and extremely well written description of the uses to which —— might be put, and without my knowledge started this treatment, but he had to report not much progress to the —— Company, and eventually they sent their own representative to stay on the place and treat the cows himself. This went on for some time, until they were reported as cured, but as in a few days the vaginal discharge was still pronounced, I was called in again, and by this time I had gained a little more knowledge and proceeded to treat the cows for endo-metritis. In the course of five or six weeks I had got the herd fairly clean as far as visible discharge was concerned.

One heifer in this lot would not hold to the bull, and I found she had a very definite discharge, with the evidence of granular vaginitis, but as I was unable to pass my hand into the vagina, owing to the smallness of the vulva, I told the owner I could do nothing except go on with the syringing of the vagina. As he was anxious to breed her, she was mated, and became pregnant, but I had to take a dead calf from her at seven months. There was also another cow which was pregnant when I treated the herd, and she also had a dead calf at seven months, which I had to take away, and the peculiarity in both cases was that there was complete paresis of the uterus, both calves lying in the uterus low down in the abdominal cavity. Both these cows had considerable discharge which, however, cleared up after about four treatments at intervals of ten days. The blood of both these cows was tested for infection with Bang's Bacillus of contagious abortion, but both proved negative.

It is not at all uncommon for cows with "whites" to become pregnant, and on more than one occasion I have noticed pus passing from the uterus when I have been delivering a live calf.

This leucorrhœa seems to be of an infective character, because I have herds under my care where every cow after she calves will, in ten or fourteen days, show a distinct leucorrhœa, with very pronounced cervicitis, and has to be treated. But these cases clear up more quickly than those that have been in existence for several months. I have to thank Captain Maguire for my first information on this subject, and he told me that in Denmark a communal veterinary surgeon

*Received on May 27th.

has to pass every cow as clean before service. When he told me this, it struck me as curious that a community should saddle themselves with such a restriction, but I can quite see the sense of it now.

I should say that leucorrhœa becomes manifest after either contagious abortion due to Bang's Bacterium or retained placenta, but here I think there must have been an endo-metritis when the cow became pregnant, or the other form of leucorrhœa, where each animal as she calves down in a very little while discharges pus from the cervix or uterus. I have also had outbreaks of scours, pneumonia and enlarged joints in calves bred from cows in which endo-metritis is present. This is very well described in Prof. Williams' work.

The first cow was then demonstrated upon. The history was that she had calved nine months, and suffered from "the whites." On examination a handful of pus was taken from the vagina. The os was very little enlarged, but with the aid of the speculum was seen to be considerably inflamed. The os was secured by the retracting forceps, a flow and return catheter introduced through the cervix, and the uterus douched with a 2 per cent. solution of Lugol's solution of iodine. Afterwards a suspension of bismuth iodoform in liquid paraffin was introduced into the uterus through the catheter by means of a rubber connection, an ordinary motor grease pump being used to inject the material.

In some cases, said Mr. Heatley, there may be great enlargement of the os and cervix, but, in place of pus, one finds a very considerable amount of thick, clear, viscid mucus, with no visible presence of any pus flakes. I have found that in these cases, swabbing the os and cervix with 10 per cent. icthyol in glycerine, alternated with neat Lugol, the best method of getting the os and cervix back to a normal condition. But also I have found that these cases are more obstinate than where you have pus, and the cervix not so enlarged.

In the second cow, which had not bred for two years, there was little to be noticed wrong with the os, and it was not absolutely definite that there was any discharge, but for purposes of demonstration a fine calibre injecting catheter was passed through the cervix, which required dilating before this could be accomplished, and about six ounces of a 1 per cent. iodine was injected. This usually causes considerable straining, but this passes off in about an hour's time.

If time had permitted it would have been interesting to have examined the ovaries of this cow, but the demonstration was mainly to show the technique of the treatment of endo-metritis. It was shown how to swab the os, if it were much enlarged, as far into the cervix as possible with neat Lugol's solution of iodine.

As a lubricant when examining the condition of the os, concluded Mr. Heatley, nothing in the way of soap should be used, as this disguises the character of the discharge. I use vaseline, which is smeared on the back of the hand, so that the fingers are free from any lubricant.

The Chairman, Col. W. A. Wood, in opening the meeting, expressed the thanks of the Society for the very interesting demonstration given by Major T. G. Heatley.

The Honorary Secretary (Mr. W. Shipley), joined with the President in voicing his thanks to Major Heatley, and expressed the opinion that the members who had visited the demonstration had benefitted considerably thereby. He felt that this was not only a most interesting, but a very important question to the members generally. One had so often been approached by stock-owners who said that they had certain cows which they could not get in calf, and they, as veterinary practitioners, until that afternoon, at least, knew little or nothing of what they were to do. It was really a question of instruments; what and how to use them, and also of their expense—which amounted, perhaps, to seven or eight pounds. He suggested that the Society should purchase a set of instruments for the use of its members, in the same way as had been done in regard to the tooth instruments. This suggestion was accordingly put to the meeting as a proposal:

"That this Society purchase a set of the necessary instruments and be guided by Mr. Heatley in the proper selection of them."

Mr. H. V. Low seconded the proposition, which was carried, and the President, Secretary, Major T. G. Heatley, Professor Reynolds, and Mr. W.H.Wortley were appointed as a small committee to go into the matter.

The minutes of the previous meeting, as published in *The Veterinary Record*, were taken as read, and were signed as correct.

New Members: Mr. W. J. Moran (of Beccles), and Mr. Burgon, Junr. (of Haverhill) were unanimously elected as members of the Society.

Election of Officers.

President.—The Secretary informed the meeting that the Annual Veterinary Congress of the National Veterinary Medical Association was this year to be held at Cambridge, and their President, Colonel Wood, had been appointed Honorary Local Secretary. This, said Mr. Shipley, was not only an honour to Colonel Wood, but also to the Society, and, under the circumstances, he felt that it would be of tremendous benefit to the Society if they re-elected Colonel Wood as their President for another year. Since his entry into the Society, at no distant date, he had taken an enormous interest in it, and more especially since taking on the presidentship had done everything in his power to make it a success. Mr. Shipley said he would have very great pleasure in proposing the re-election of Colonel Wood, and he thanked him for his services in the past.

Mr. W. H. Wortley seconded the proposition, which was carried with enthusiasm.

Colonel Wood returned thanks to the members for their kind remarks and appreciation.

Committee: The Committee was re-elected *en bloc* with the exception of the substitution for Mr. Godbold of Mr. Downe, of Diss.

Hon. Secretary and Treasurer: Mr. W. Shipley was re-elected as Honorary Secretary and Treasurer.

Auditors: Messrs. H. Buckingham (of Norwich) and T. E. Barcham (of Paston).

It was agreed that an honorarium be given to Mr. Wright, Mr. Shipley's clerk.

The Balance Sheet and Accounts for the year 1924 having been presented, the PRESIDENT asked the meeting if it was their wish that these should be adopted. The vote having been taken, the accounts, as published, were passed without comment. Mr. W. H. Wortley proposed that a sum of ten pounds should be given to the Victoria Veterinary Benevolent Fund.

The Treasurer moved, as an amendment, that the Society should give five pounds to the Victoria Veterinary Benevolent Fund as a donation, instead of ten pounds. The amendment was carried.

The SECRETARY read the following correspondence:

(*a*) A letter from the Secretary of the Ipswich Clinical Society, addressed to Colonel Wood, in reference to a paper which it was proposed should be read by Professor Hobday at Ipswich on 11th March. It was decided to communicate with the Ipswich Clinical Society and obtain invitations on behalf of the members of the Society.

(*b*) A letter from Major A. F. Castle, R.A.V.C. (T.), of Ipswich, drawing the attention of the members of the Society to the deficiency in officers—available in particular for the annual Army Training Camps, and inviting members to consider accepting Commissions in the Territorial Association. Mr. SHIPLEY said that it was quite a nuisance to the few of them who were territorial officers when it came to matter of attending camp; they demanded their services more often than it is possible to give them. If there was any member of this Society who felt inclined to accept a commission he would assure them it was certainly worth considering.

THE PROPOSED VETERINARY RESEARCH COUNCIL.

(*c*) A letter from the Secretary of the National V.M.A. forwarding a copy of the Resolution passed by the Western Counties Division in reference to the proposed Veterinary Research Council.

In response to the President's invitation to him to speak on the matter—

Professor BUXTON said: Before making any observations, I should like to point out that my knowledge of the proposed scheme which emanates from Sir John Moore is confined to the report of a Meeting of the Central Society. I should imagine that no one could treat the proposal—in its present form—with any degree of seriousness were it not for the fact that it has been referred to the divisions by the "National." It is, I think, an unjustifiable procedure to forward such a resolution to divisions. How can members be expected to arrive at any sound conclusion unless information, absolutely essential to their deliberations, is provided. Let us consider a few points:—In paragraph 1 the resolution urges the formation of a Veterinary Research Council "for the better elucidation of animal diseases." This is to be effected by the election to the Council of three medical scientists, an agricultural stockowner, a plant pathologist, and an equal number of veterinary Surgeons.

In the report of the proceedings of the Central Division in the issue of ***The Veterinary Record*** dated December 27th, 1924, Sir John Moore is stated to have said that he was asked "Did not I know that there was a Diseases of Animals' Research Council already in existence?" "I said I did not know, and I was convinced, at all events, that there was no official Diseases of Animals Research Council. I have no particular use, if there is such a Council, for anything that has been born in the dark." Surely this is an amazing statement, coming, as it does, from a person who is urging the formation of a body on almost identical lines with that which is already in existence. Did Sir John simply mean to imply that he is dissatisfied with the veterinary members of the Council, or did he really not bother to find out whether such a body was in being? That it was at least the former is shown by his later statement that "with all respect to those gentlemen (members of the veterinary profession) who are associated with the Development Commission, they were not there by the voice of the profession. They were selected in a haphazard way by the Government, and I am not prepared to accept their selection unless they are elected by the voice of the profession." So it would appear that Sir John Moore *did* know that such a body existed and that it was an *official* body. The phraseology employed by Sir John was unfortunate, because one would hesitate to assume that it was his deliberate intention to insult the veterinary members of the Council *especially since in his own scheme he includes those very members.* If such peculiar statements had been made by anyone less well known and respected for his honesty of purpose than Sir John Moore, one would be forced to the conclusion that the individual from whom they emanated was simply endeavouring to arouse suspicion and dissatisfaction in the minds of the members of the profession for some ulterior purpose.

It would be tedious to deal with every astonishing statement in each of the paragraphs of the resolution, and as our time is precious we might confine our attention to those which would completely appear to rule the resolution out of court.

Paragraph 3 states "That such Veterinary Research Council should have similar status and powers to the Medical Research Council."

(To be continued.)

The serious spread of sheep scab in Essex was referred to at a meeting of the Diseases of Animals Committee for the county, Major Llewellyn (Divisional Inspector for the Ministry) pointing out that nineteen cases had been notified since November. The Ministry's suggestion was that Essex should put into force both parts of the Sheep Scab Order, which would mean restricting the movement of sheep out of Essex until they had been double-dipped; and double-dipping twice within fourteen days between July 15th and August 31st. Opinions for and against were expressed, but eventually it was agreed to approve the Ministry's recommendation.

NOTES AND NEWS.

The Editor will be glad to receive items of professional interest in these columns.

Diary of Events.

June 19th—R.A.V.C. Annual Dinner, Hotel Cecil.
July 2nd—R.C.V.S. Annual Dinner, Hotel Victoria.

It was with gratification that we welcomed, amongst our visitors to the office last week, the three distinguished pathologists, who have been appointed by the Bureau of Animal Industry in America to study foot and mouth disease at close quarters in Europe, instead of engaging in experiments with virus imported for that purpose into America. The commission, which consists of Dr. H. W. Schœnig, of the Rockfeller Institute, New York, and Dr. Peter K. Olitsky and Dr. Jacob Traum, of the U.S. Bureau of Animal Industry, Washington, will proceed to Berlin and thereafter visit laboratories in France and Hungary. They may also visit Sweden, where it is said that foot and mouth disease has got out of control because of the granting of exemptions from slaughter in a recent outbreak. This is a welcome addition to the research work now in progress here and on the Continent.

Our readers will be glad to learn that these gentlemen have intimated their intention to attend the Cambridge Congress if, as is probable, they are in this country at the time.

Royal College of Veterinary Surgeons.

Obituary.

We very much regret to have to report the untimely death of Dr. D. H. DeJong, which took place on the 30th May in his 60th year. Dr. DeJong, was a Professor of the Veterinary School at Utrecht and also Professor of Comparative Pathology at the University of Leyden. He had been ailing for some time and ultimately entered a nursing home last month for the purpose of an operation, which was unfortunately, not successful in saving his life.

Professor DeJong was elected an Honorary Associate of the Royal College of Veterinary Surgeons in July 1914, on the occasion of the 10th International Veterinary Congress. He was Secretary to the Permanent Commission of International Veterinary Congresses, and his death will make it extremely difficult to carry out the rather complicated arrangements necessary to be settled before a reconstituted Permanent Commission can be called into being—a necessary preliminary to the re-establishment of the International Veterinary Congresses.

Beach, Thomas William, M.R.C.V.S., 1 Portman Avenue, East Sheen. Graduated London April 22nd, 1868. Died May 18th, 1925.

Wilson, William Hendy, M.R.C.V.S., 15 Shaw Street, Dublin. Graduated Dublin, July 12th, 1916. Died March 22nd, 1925.

Tinkler, George de Lisle Bird, M.R.C.V.S., Cossington, Leicester. Graduated London, December 15th, 1891. Died 28th May, 1925.

Model Abattoir at Wembley Exhibition.

Speaking at the Annual Meeting of the Model Abattoir Society, on May 8th, Sir James Crichton-Browne said that the Society had availed itself of every opportunity of promoting slaughter house reform, and had been glad to note a revival of public interest in the subject. Of that revival the Society hoped to take advantage by a more active and extended propaganda, which it was encouraged to undertake by the success attending the Sir Benjamin Ward Richardson Memorial Lectures which it had instituted. That lecture for last year was delivered by Dr. Chalmers Mitchell and was on Hygiene in Animal Food on Evidence from the Zoological Gardens, and gave a most able and luminous review of methods of slaughtering and the preliminary treatment of animals, of the handling and inspection of meat, of the diseases of animals, especially pneumonia, tuberculosis and those of parasitic origin, of cleanliness and disinfection, temperature and ventilation and sunlight in relation to animals in captivity or under domestication.

Ten years ago, at the instigation of the Society, Mr. Stephen Ayling prepared a model showing what an abattoir should be, and that model had been exhibited in various parts of the country, and had been of great assistance to many towns entering upon slaughterhouse construction or amendment.

But even in ten years, advances had been made in abattoirs. Improvements in the internal arrangements of slaughter houses had been introduced; therefore the Society had commissioned Mr. Ayling to prepare an entirely new and up-to-date model. This had been done at the request of the Ministry of Health, communicated by Professor Kenwood. This model would be on exhibition at the Empire Exhibition in the Ministry of Health Section, and would, it was hoped, incite some local authorities to undertake the construction of public abattoirs. After Wembley, the model will be given on loan for exhibition to towns that contemplate the provision of public abattoirs.

International Horse Show.

The Fourteenth International Horse Show will be held at Olympia, from June 22nd to June 30th, under the patronage of the King. There are about 2,000 entries, which has made it necessary to arrange sessions daily for the judging. The gala performance will take place on the afternoon of the first day, when the King George V. Gold Cup, now held by Italy, will be jumped for round the course. Six nations have already officially entered officers and horses for this competition—Belgium, France, Great Britain, Holland, Italy, Poland, and Sweden. The test for the Prince of Wales's Cup, in which each nation selects a team of three officers, will be made on Friday afternoon, June 26th. This trophy last year was won by the British cavalrymen.

Among the new classes this year is one for British civilian owners of jumping horses, for which the Show Jumping Association offers a challenge cup and for which there are also cash prizes. Two other new awards are the Lord Dewar cup for single harness horses and the Lacloche cup for officers' light-weight chargers. Other features of the show include two coaching marathons from Richmond Park, a visit of the Coaching Club, the Scurry jumping competition for the Wanamaker gold cup, judging of London and provincial mounted police, a coach horn-blowing contest, parades of trade turnouts, and the costers' donkey carnival. There will be jumping Competitions round the international course at each afternoon and evening performance.

There are now no general restrictions dealing with foot-and-mouth disease in force in any part of Great Britain for the first time since the widespread outbreak which commenced in August, 1923.

"The *Veterinary Journal* publishes to-day," says the *Morning Post*, of May 30th, "a warning against the danger to man of allowing bovine tuberculosis to exist. The position of the veterinary profession is summarised in the leading article, which says that if they can eradicate even only the tuberculosis distributor from children's milk supply they will have proved that they hold an absolutely unique and necessary position in the scheme of public health."

Over 500 animals are affected by outbreak of swine fever in the eastern area of East Lothian.

An anthrax outbreak on a Hadleigh, Suffolk, farm has caused the death of stock worth £200.

CORRESPONDENCE.

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.
All correspondence must bear the name and address of the contributor for publication.
The Editor does not hold himself responsible for the opinions of his correspondents.

Swine Erysipelas.

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—Your invitation to receive the views of practitioners on swine erysipelas induces me to write the following observations.

I have observed in recent years that this disease is more prevalent, that farmers frequently fail to bring it before the notice of Veterinary Surgeons and others because they think it will be diagnosed as swine fever. Further, that inspectors frequently "play for safety" and report as "suspected swine fever," when the disease is swine erysipelas. With regard to the symptoms enumerated in your article June 6th, I am inclined to agree, with the following exceptions—that lung symptoms, especially pleurisy are not mentioned and that, as I think, discolouration of the skin is made too prominent, as this condition is seen in so many different kinds of pig complaints.

There is another aspect of this disease, the conditions under which it may be contracted, that deserves consideration.

In recent years, especially since the war, the open run grass-fed means of rearing and feeding pigs has come into fashion. Now, if this is confined to hurdling, or otherwise confining the pigs to pasture, the results are, no doubt, good. However, this is expensive as far as efficient hurdling or fencing is concerned, and as a compromise—particularly amongst smallholders—pigs roam everywhere, especially around the dung heaps and middens and can pick up any filthy garbage they wish.

The old fashioned pig stye, bad as it was from some points of view, had this advantage: it was provided with a more or less impervious floor which could be comparatively easily cleaned and freed from soil and other infection.—WILLIAM T. STEVENS.

Southill, Wincanton, Somerset,
June 8th, 1925.

The Exportation of Horses.

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—I thank you for your courtesy in publishing my previous letter and for kindly devoting so much of your valuable space to this subject—which is, of course, of great interest to the veterinary profession. I would be glad if you would allow me to write a reply to Mr. Mayall's further letter published in your issue of the 6th instant.

Mr. Mayall opens his remarks by saying "the proving of cruelty *depends on corroboration of facts by unbiassed persons* and not on literature circulated by people going about trying to detect cruelty." (The italics are mine.) "Unbiassed people" if they want to obtain corroborative evidence must go about—not "trying to detect cruelty" perhaps, but trying to find such corroborative evidence. The special correspondent of *The Manchester Guardian* is surely an "unbiassed" person, and his evidence of cruelty at the Vaugirard Slaughterhouse was published in his paper without the knowledge or connivance of the R.S.P.C.A.—though it was subsequently published by the Society as valuable "corroboration of facts by unbiassed persons," and so his evidence and that of others unconnected with "Mr. Fairholme and his rich Society" is exactly what Mr. Mayall appears to need. This I am glad to say, we have been able to supply.

As to bringing relevant facts before foreign countries—why should we do this when the origin of the traffic—with its inherent cruelties—is to be found in Great Britain, where the animals in question are sold.

I wonder how far Wilberforce and hs followers would have got in their anti-slavery campaign if they had merely sought to educate the slave-owners and buyers. It is surely more efficacious to stop the supply than to pander to a demand which involves cruelty.—Yours faithfully,
S. G. FAIRHOLME, Captain, Chief Secretary.

Royal Society for the Prevention of Cruelty to Animals,
105 Jermyn Street, London, S.W. 1.,
June 8th, 1925.

* * * *

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—To add colour to facts, or to distort their perspective, is untruthful, and therefore ineffective. The public believe me because I record facts as they are. It is bare fact that horses that have not eaten on the boats suffer more from subsequent deprivation of food: and that a hungry horse in a stable "trembled." Therefore I reported those facts.

If Mr. Campbell will call, by appointment, at the R.S.P.C.A., he can see two films of killing by the knife (in a Belgian village) taken by Pathé Frères. That is the simplest and cheapest way of killing horses, so why should the butchers change it?

Some time after the war, I reported in the press that English horses were still being sold to the Veterinary College at Brussels for vivisection. An official of the Ministry of Agriculture wrote to me in a doubting mood asking for further details. I referred him to the College Authorities, but remarked that direct questioning might not elicit facts. So the official wrote and received for answer the number of English horses already bought by the College that year. I learned this from a Belgian man, my friend, who called at the College to get me the latest details. The Authorities told him of the letter from the English Government, and their answer —also, in answer to his question, that they did not give an anæsthetic, only a mild sedative.

Mr. Campbell reproaches me with not recognising him "on the side of the angels." But he does not say what sort of angels? There are two sorts. One sort protects the export of horses for butchery, the other sort fights against it. And somewhere in Scripture I have read that one sort of angel "durst not bring a railing accusation" against someone. Then I remember "the very essence and quiddity of uncontrolled sentimentalism"?—And I wonder?—Yours faithfully, A. M. F. COLE.

30 Kestrel Avenue, Herne Hill,
London, S.E. 24.,
June 3rd, 1925.

Civil Veterinary Employment in India.

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—In the interets of members contemplating service in civil employment in this country, I feel I ought to make a few remarks regarding an advertisement appearing recently in "The Record." A position was being offered

to a recent graduate on a salary of £500 per annum with free quarters. At the present rate of exchange £500 represents approximately 550 rupees per month. Further comment will be unnecessary regarding the inadequacy of the same if I add, that the initial salary of a bank clerk or an assistant in the Mercantile concerns of this country range even higher, and then it is only by the exercise of extreme economy in living and by "a thin time" existence that a European can subsist on such remuneration. Is it not time that we valued our services higher ?—I am, yours truly, L. J. KELLY, F.R.C.V.S.

c/o Cook and Co.,
Park Street 113, Calcutta,
May 21st, 1925.

The Restricted Area Plan of Tuberculosis Eradication.

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—I have just noticed in the issue of *The Veterinary Record* of May 2nd, 1925, an abstract from *The Agricultural Gazette of Canada* of January and February, 1924, from my paper on the restricted area plan of eradication of bovine tuberculosis.

I find that an error has occurred in the figures which you quote in the last paragraph following the printing of the abstract. You state that since the article was printed the following figures are to hand. You then go on to state that still another tuberculosis free area has been started in Quebec, and that of 160,000 head tested a little less than 8 per cent. reacted.

As a matter of fact the total number of cattle in that area and which were tested was a little over 52,000. You further state that the compensation for that test was $240,000, whereas the total amount of compensation paid for that test was $150,785.

You then quote me as saying that "we had re-tested 15,000 head of reactors." This is a serious error, as it is not the policy of this Department to conduct a re-test of a reacting animal. Animals which react are promptly consigned to an establishment under our inspection for slaughter and we do not re-test reacting cattle.

The error has probably occurred in the fact that the re-tests are only conducted on premises on which reacting cattle have been found, but only the non-reacting cattle are re-tested, as the reactors are slaughtered long before the re-test of the other animals is commenced.

I have thought it well to draw your attention to these discrepancies, especially with regard to the statement that the reactors were re-tested. We could not make any progress in our control measures if we permitted the re-test of reactors, and it would be unfortunate if your readers should be misinformed in this connection.

I would also respectfully draw your attention to the prefix "U.S." before Acting Veterinary Director General which should not, of course, be used, as our work is limited to the Dominion of Canada.—Yours sincerely, GEORGE HILTON, Veterinary Director General.

Department of Agriculture,
Health of Animals Branch,
Ottawa,
May 19th, 1925.

* * * *

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—I should be glad if you would publish the following correction: Geo. Hilton, U.S. Acting Veterinary Director General, should read: Geo. Hilton, V.S. (Veterinary Surgeon) Acting Veterinary Director General.

The mistake occurred, no doubt, on account of the writing of the letters so much alike. The trouble is that it makes it appear as though Dr. Hilton was United States Acting Veterinary General, whereas it was the position he then held in Canada.—Thanking you in anticipation, yours truly, CECILIA L. HILL (Mrs.).

Chaddesley Farm, Haywood,
Manitoba, Canada,
May 20th, 1925.

The R.C.V.S. Council Election.

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—May I crave a small space to express my cordial thanks to the 807 fellows and members who recorded their votes in my favour at the election last week.

At the same time, I assure them that I will continue to use my best endeavours at all times for the general advancement of the profession, which they have done me the honour to represent on its Council.—I am, yours faithfully, P. J. SIMPSON.

Shirley, Castle Hill,
Maidenhead.
June 6th, 1925.

* * * *

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—May I ask the favour of a small space in the next issue of the *Record* in which to thank very sincerely those Fellows and Members who so kindly honoured me with their support, thus electing me a member of Council of the Royal College of Veterinary Surgeons.

I consider my election not only as a great honour but also a responsibility and I shall endeavour to the best of my ability to merit the confidence extended to me.—Yours faithfully, T. DUNLOP YOUNG.

Veterinary Inspectors' Office,
503-4 Central Markets, Smithfield,
London, E.C. 1.,
June 4th, 1925.

* * * *

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—I desire to tender my sincere thanks to those 752 voters who supported me at the recent election to the Council R.C.V.S.—Yours faithfully, W. S. KING.

264 Burdett Road, E.14.
June 9th, 1925.

The Etiology of Milk Fever.

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—I hope this correspondence may continue until a correct theory is established re the above disease and a better name given it, as our nomenclature is at fault and requires over hauling

I may mention that my articles on Milk Fever in the *Veterinary Record* last year were widely read in America and Canada, as I was told when I got there. I also had the honour to be noted in the New Zealand paper of June 2nd, 1924, *The New Zealand Farmer* where my papers are extensively quoted for the New Zealand Farmers' Benefit.

I mentioned in my papers, as Mr. W. Peirson of Crieff has done, on June 6th, 1925, that carbonic acid poisoning as well as acidosis, or acid condition of the blood, milk stomach contents were found by me in all milk fever cases that I attended.

Hoping that the discussion will be continued by other observers.—I remain, Yours sincerely, J. D. POTTIE.

Greenock,
June 6th, 1925.

The Editor acknowledges the receipt of the following:—

Communications from Dr. O. C. Bradley, Professor Gaiger, Mr. V. C. Gokhale, Dr. Tom Hare, Messrs. B. J. M. Nairn, W. J. B. Robson, R. H. Smythe and Henry Taylor.

Report of a meeting of the Midland Counties' Division, from Mr. H. J. Dawes, Hon. Secretary.

National Veterinary Medical Association of Great Britain and Ireland, Limited.

EDITORIAL OFFICE: 10 Gray's Inn Square, London W.C.1.

Cheques should be made payable and all communications sent to the General Secretary at the Offices of the Association, 10 Gray's Inn Square, London, W.C.1.